

## Objectives

**T**he purpose of this chapter is to outline an approach to restore function to coastal and estuarine habitat. The objectives described below, along with the planning and prioritization framework and regional analyses presented in later chapters, support habitat restoration programs and activities implemented over a variety of geographic scales. They also support the Estuary Restoration Act goal to restore one million acres by 2010. These objectives were developed in a year-long collaborative process with participants from local, state and federal government agencies, nonprofit organizations, and scientific and academic communities.

### THE ESTUARY RESTORATION ACT OF 2000

The Estuary Restoration Act was signed into law in November 2000 with strong bipartisan support. The Act makes a strong federal commitment and encourages public-private partnerships to restore habitat in America's estuaries. The Act:

- ❖ Makes restoring America's estuaries a national priority.
- ❖ Creates the federal Estuary Habitat Restoration Council.
- ❖ Requires development of an Estuary Habitat Restoration Strategy.
- ❖ Sets a goal of restoring one million acres of estuarine habitat by 2010.
- ❖ Authorizes \$275 million over five years for restoration projects.
- ❖ Requires enhanced monitoring, data sharing, and research capabilities.

### OBJECTIVES OF *A NATIONAL STRATEGY*

- 1. Habitat Restoration:** Implement restoration projects to provide healthy ecosystems that support wildlife, fish and shellfish; improve surface water and groundwater quality; enhance flood control; and increase opportunities for outdoor recreation.
- 2. Restoration Partnerships:** Create and maintain effective public-private restoration partnerships to maximize restoration efforts at the federal, state and local levels.
- 3. Restoration Planning and Priority Setting:** Encourage priority setting and restoration planning in the coastal United States.
- 4. Science and Technology:** Apply the best appropriate restoration science and technology in project design and implementation.
- 5. Monitoring and Evaluation:** Evaluate the effectiveness of coastal and estuarine habitat restoration efforts on both the project and estuary level.
- 6. Outreach and Education:** Increase government, corporate, community, and individual awareness of, support for, and involvement in coastal and estuarine restoration and protection.
- 7. Funding:** Obtain sufficient funding, both public and private, to implement restoration planning activities, complete on-the-ground projects, conduct monitoring at estuary and project scales, and implement outreach measures.

## ■ OBJECTIVE ONE: HABITAT RESTORATION

Implement restoration projects to provide healthy ecosystems that support wildlife, fish, and shellfish; improve surface water and groundwater quality; enhance flood control; and increase opportunities for outdoor recreation.

Healthy coasts and estuaries provide irreplaceable ecosystem services and are critical to economic and ecological prosperity.

### Actions

- ❖ *Encourage all coastal and estuary restoration projects in the United States to be consistent with relevant restoration plans.*

The regional analyses in chapter four provide an overview of restoration plans currently available. The National Strategy Restoration Plan Database, available at *A National Strategy* Web site, includes a synopsis of major habitat restoration planning efforts. Developing and funding projects that are consistent with regional or estuary-level restoration plans will improve effectiveness of restoration on a larger scale and result in progress toward strategic goals. Projects also should be scientifically sound and have a good chance of being successfully implemented.

- ❖ *Fund and implement habitat restoration projects based on regional priorities and best planning efforts.*

Projects based on regional or estuary-level priorities will maximize the benefits of coastal and estuarine habitat restoration. Funding decisions should be consistent with regional priorities and address issues of importance to coastal communities and other stakeholders.

## ■ OBJECTIVE TWO: RESTORATION PARTNERSHIPS

Create and maintain effective restoration partnerships that include diverse private and public organizations and agencies to maximize effectiveness at the federal, state, and local levels.

Participation by and coordination with diverse public and private groups are necessary components of successful restoration. More than 70 federal programs are equipped to play a role in habitat restoration, and scores of state and local programs and non-governmental organizations are actively restoring habitat. New and continued partnerships will bring greater benefits for coastal and estuarine habitat.

### Actions

- ❖ *Encourage government and non-government partners to support the Principles of Estuarine Habitat Restoration.*

The Principles of Estuarine Habitat Restoration present 14 essential elements for restoration planning, design and implementation. These principles can provide the foundation for both formal and informal partnerships among public agencies and private organizations, facilitate the coordination of habitat restoration programs and budgets, and accelerate the achievement of restoration goals.

- ❖ *Increase private sector participation in restoration of coastal and estuarine habitat.*

Habitat restoration programs should encourage the participation of private organizations, companies and individuals (such as private landowners) in restoration activities. Private support can take a number of forms, from engaging volunteers in implementing projects to providing in-kind services, materials or funding. Broad community support helps ensure long-term success of restoration efforts.

- ❖ *Provide examples of effective program coordination at the estuary level.*

Project planners and designers can avoid potential pitfalls by learning from the successful coordination experiences of other programs. Initial project coordination should be carried through into project design and implementation and consider issues such as community outreach, funding and stakeholder responsibilities. Early and consistent coordination can minimize duplication of effort and misunderstanding of roles.

- ❖ *Establish a national advisory mechanism, such as a working group on coastal and estuary restoration.*

A working group with representatives from federal agencies, academia, scientists, state organizations and nonprofit groups should be created in order to ensure maximum coordination between the various sectors engaged in coastal and estuarine restoration, and encourage a spirit of cooperation in all aspects of restoration, from setting regional priorities to constructing individual projects.

- ❖ *Develop awards that recognize the contributions of partners involved in coastal and estuary restoration.*

Aside from financial incentives, another way to encourage

creative, energetic partnerships is to support annual awards recognizing successful restoration efforts. These awards should be given to a wide variety of groups, including non-governmental organizations, members of the public, businesses and government agencies, and should recognize local and national efforts.

### ■ OBJECTIVE THREE: RESTORATION PLANNING AND PRIORITY-SETTING

#### Encourage priority-setting and restoration planning in the coastal United States.

There are substantial gaps in restoration planning on regional and estuary-wide scales in every region of the United States. Although approaches to coastal and estuarine habitat restoration will vary according to local needs and priorities, projects will be more effective at restoring habitat function if they are developed as part of a larger planning process. The framework provided in chapter three and the regional analyses presented in chapter four provide useful information in moving to the next step of planning and establishing goals and priorities for restoration. Undertaking planning activities should not preclude or delay restoration activities in coastal and estuarine habitats. While more strategic planning is needed, the knowledge, skills and technologies exist to make substantial improvements in the near term.

#### Actions

- ❖ *Identify gaps in restoration planning and baseline conditions.*

The level and sophistication of planning for estuarine and coastal habitat restoration varies significantly among the regions and watersheds of the United States. In some coastal areas only broad, coastal management planning has been completed. In other areas sophisticated planning efforts with strong community and stakeholder participation have determined specific habitat restoration goals and priorities. Quantitative information about baseline habitat conditions should be developed and assembled to assist planning efforts. The regional analyses in chapter four provide a starting point for this effort.

- ❖ *Complete planning for coastal and estuarine habitat restoration.*

Habitat restoration planning that identifies goals and priorities should be completed in all coastal areas of the United States. Identifying regional or estuary-level restoration priorities will help projects address the most critical needs for

coastal and estuarine habitat. Priority should be given to projects that are most likely to successfully restore critical functions and services provided by the habitat. By considering both human and ecological services, a broader level of support for restoration activities will result. Improved planning also will allow benefits to be accrued over a larger scale and enhance the overall effectiveness of restoration efforts.

- ❖ *Produce and implement a framework for restoration project design and evaluation.*

Restoration practitioners should use a project-level framework based on the Principles of Estuarine Habitat Restoration developed by Restore America's Estuaries and the Estuarine Research Federation. The framework should include long-term goals, partnerships, consideration of off-site factors, effective monitoring and success criteria. Incorporating these elements into every project will help ensure that investments in restoration are achieving maximum benefits. The project-level information provided in chapter three provides a starting point for this framework.

- ❖ *Conduct regional workshops in estuarine and coastal habitat restoration.*

To promote regional approaches to restoration planning and evaluate the success of existing regional restoration planning efforts, representatives from agencies and organizations engaged in restoration are encouraged to participate in regional workshops. Workshops could focus on identifying existing gaps in restoration planning, determining mechanisms for improved coordination, and evaluating case studies of lessons learned from prior restoration efforts.

### ■ OBJECTIVE FOUR: SCIENCE AND TECHNOLOGY

#### Apply the best appropriate restoration science and technology in project design and implementation.

Research on restoration science and technology is ongoing, and restoration planning and projects should reflect the changing body of knowledge. Coastal regions also have much to offer one another in innovative and successful approaches and techniques. Mechanisms are needed to distribute and share information on restoration methods, monitoring techniques and success criteria at the project and estuary scales.

## **Actions**

- ❖ *Conduct periodic review of restoration science and technology.*

A national science and technical advisory committee should be created that provides balanced and inclusive representation from all fields of study associated with restoration of coastal and estuarine habitat. This committee should be charged with establishing the current state of restoration knowledge; identifying significant information gaps; selecting priorities for research and development of new technologies or applications; and providing periodic review of new science, technology and implementation practices to determine relative effectiveness and limitations.

- ❖ *Make information on restoration science and technology widely available.*

The findings of the science and technical advisory committee should be transmitted to universities, colleges, government agencies, nonprofit organizations and others interested in restoration activities. The information should be used to develop evaluation criteria to identify projects that include the best appropriate science and technology. Results could be provided through periodic reports, a database of findings and periodic dissemination of case studies highlighting success factors.

- ❖ *Encourage development and use of innovative restoration technologies.*

To advance the state of restoration science, new approaches and applications must be tested. Funds should be set aside for the purpose of supporting the development and application of innovative restoration technologies. The findings from a science and technical advisory committee and annual assessments of research needs could provide criteria for the use of these funds. New techniques and applications should be monitored to evaluate their effectiveness and results should be widely distributed.

- ❖ *Encourage peer review of project proposals to determine their scientific and technical merit.*

A science and technology advisory committee and a peer review network are two mechanisms for determining the quality of project proposals in a peer review process. Project reviews by experts with local knowledge can help ensure that project proponents take full advantage of available information, methods and technologies. Reviews should

focus on scientific and technical merit as well as the feasibility of achieving project goals.

## **■ OBJECTIVE FIVE: MONITORING AND EVALUATION**

### **Evaluate effectiveness of coastal and estuary habitat restoration efforts.**

By tracking progress at both the project and estuary level, the success of individual techniques can be determined as well as whether the goals of regional or estuary-scale plans are being met. Monitoring information can be used to alter strategies where necessary. Monitoring new technologies will encourage their future use. It is just as important to document failures as successes in order to improve techniques in the future.

## **Actions**

- ❖ *Convene a national task force to determine how to measure progress toward the one-million-acre goal of the Estuary Habitat Restoration Strategy in the Estuary Restoration Act.*

Habitat restoration projects are diverse. Some projects can measure success in terms of acreage restored, but many cannot. A national task force should be convened to define a baseline comparison and recommend methods for tracking progress toward the one-million-acre goal. The task force should consider regional and local perspectives on quantifying project successes.

- ❖ *Produce a report to the nation about estuarine trends in 2003 and 2005 and periodically thereafter.*

A report should be produced to track progress toward the one-million-acre goal (and other habitat trends) using the success metrics recommended by the task force. Key findings should be widely disseminated.

- ❖ *Determine baseline conditions.*

Evaluating progress toward restoring one million acres of estuary habitat by 2010 will require a national inventory to accurately document habitat restoration efforts. On a local level, project managers should document pre-project conditions, especially those aspects of an estuary that make it unique and in need of restoration. This effort should use available data to establish a baseline for all relevant physical, chemical, hydrological and biological parameters. If existing data sources are inadequate, supplemental data collection efforts should be supported.

- ❖ *Ensure that each estuary restoration project has a monitoring component and measurable goals.*

Determining the effectiveness of a restoration project requires clear, measurable goals and a monitoring plan that focuses on the applicable attributes of the ecosystem. The restoration project design should outline specific environmental factors targeted for improvement, how they will be improved, and how monitoring will document changes. Projects should identify appropriate reference sites for comparison. Where appropriate, monitoring project designs should incorporate results of fieldwork under other programs to maximize efficiency of data collection and minimize duplicative efforts.

- ❖ *Determine standard data formats for reports and comparison of project data.*

Data standards should be developed to allow for consistent comparison between projects and tracking of progress in habitat restoration. Creating data standards at the beginning of this nationwide effort will facilitate creation of a central database containing relevant coastal and estuarine habitat restoration project data. The standards should build on existing interagency efforts to develop monitoring protocols and other relevant protocols. This objective is not intended to limit the types of information gathered by project proponents, but rather to ensure that data will be useful to other parties.

- ❖ *Establish a centralized database to track habitat changes on local, watershed and national levels.*

A consolidated Web-based database should be created to ensure widespread dissemination and use of restoration project and monitoring data. Information should include all pertinent data, including information on changes from baseline conditions.

- ❖ *Create periodic updates evaluating restoration and monitoring techniques, especially new and developing technologies.*

A variety of restoration techniques for an array of habitats are used throughout the country. Periodic reports would allow restoration practitioners to learn from the experience of others. Reports should detail the use of innovative technologies and applications and include information about implementation costs and project benefits.

## ■ OBJECTIVE SIX: OUTREACH AND EDUCATION

**Increase government, corporate and individual awareness of and support for coastal and estuary restoration and protection.**

The restoration and maintenance of healthy coasts and estuaries will require the long-term support of a broad cross section of the public, including those who live inland, as well as those who live on or near the coast. Successful restoration requires an informed public willing to support the policies, funding and lifestyle changes necessary to maintain healthy and productive ecosystems. Local stewardship facilitates long-term conservation and restoration.

### Actions

- ❖ *Develop a coordinated education and outreach campaign for A National Strategy, including a method to measure its success.*

Education and outreach strategies should build on materials and ideas developed by successful coastal and estuary management programs. For example, universities and educational organizations could be consulted for strategies for including lessons on estuaries in school curricula; advertising agencies could provide assistance in developing promotional materials for use in the media; and professional polling firms could be used to determine the success of the program.

- ❖ *Increase public awareness of restoration efforts and accomplishments.*

Increased public awareness will help promote and create support for restoration efforts throughout the coastal United States. Examples of ways to increase awareness include Web-based virtual tours, educator's guidebooks and interpretive signs at restoration project sites. Existing coastal and estuarine management programs with outreach efforts could be expanded to accomplish this objective.

- ❖ *Facilitate community and volunteer involvement in planning, construction, maintenance and monitoring of restoration projects.*

Already, tens of thousands of community volunteers participate in restoration efforts, and successful models for engaging volunteers are plentiful. Continued local stewardship of estuary restoration projects will facilitate long-term conservation of restored areas. As stewards, local community members can be alert to improvements in and threats to the

restored area and the surrounding watershed. When appropriate, volunteers should be used to facilitate monitoring and maintenance—activities that often prove challenging for agency partners.

- ❖ *Encourage corporate partnerships for habitat protection and restoration.*

Many corporations and businesses may be willing to provide support to restoration efforts including project funds and materials and even food for volunteers. Working with organizations such as the National Corporate Wetlands Restoration Partnership (CWRP) is one way to reach potential sponsors.

- ❖ *Encourage agencies and organizations to increase public awareness of restoration efforts by organizing publicity events and providing signage for projects that contribute to coastal and estuarine health.*

Simple signs can provide recognition of the partners involved in a project and inform visitors of the project purpose. Signs convey to the public an understanding of restoration efforts and may inhibit vandalism and illegal dumping of trash at project sites by providing a positive message about restoration. Signage may also promote public support for estuary restoration programs.

- ❖ *Increase agency involvement by officially recognizing agency policy and actions that benefit coastal and estuarine health.*

Federal agency activities may affect the health of the nation's coasts and estuaries. Agencies should be aware of the critical need to maintain and restore coastal and estuarine habitat. Federal, state and local agency efforts to benefit coastal and estuarine habitat are important for the long-term health of these vital systems, and should be recognized as an essential component of restoration activities.

## ■ OBJECTIVE SEVEN: FUNDING

**Obtain sufficient funding, both public and private, to implement restoration planning activities, on-the-ground projects, monitoring at estuary and project scales, and outreach measures to restore function to coastal and estuarine habitat.**

The Estuary Restoration Act of 2000 authorizes \$275 million over five years for estuarine habitat restoration projects and calls for leveraging existing resources to maximize the effec-

tiveness of restoration efforts. This provides an excellent opportunity to improve the quality of our coastal environments. Because coastal and estuarine habitats provide substantial local benefits, governments at all levels should demonstrate strong support for restoration.

### Actions

- ❖ *Ensure that federal agencies include consistent budget language and policies in support of restoration.*

Federal agency support of A National Strategy will facilitate efforts to preserve, protect and restore our nation's coastal and estuarine habitat. Federal agencies should work together to ensure that budget requests are consistent with the approaches outlined in this strategy. Agencies also could coordinate rules, policies and programs to improve protection and restoration of coastal and estuarine environments.

- ❖ *Ensure that states support coastal and estuarine habitat restoration activities.*

Because estuaries provide substantial benefits to the states in which they are located, state governments should demonstrate strong support for restoration of their coasts and estuaries. In addition to dedicating funds for restoration, state programs to treat upstream sources of pollution or protect streamside buffer zones indicate a positive commitment to restoring habitat function.

- ❖ *Encourage transfer of information about public and private sources of funding through development and maintenance of an on-line guide.*

Existing Web sites that provide information on sources of restoration project funding should be maintained and expanded. Databases that are created to track projects funded under the Estuary Restoration Act should be linked to Web sites that demonstrate restoration progress.

- ❖ *Ensure funding is used efficiently and effectively.*

Restoration projects that are cost effective, technically feasible, scientifically sound and address priorities expressed in local, regional and national plans should receive adequate funding.